Propositions accompanying the dissertation

PET imaging of P-glycoprotein at the blood-brain barrier with new ^{18}F-tracers

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1. P-gp imaging by PET can help to understand the P-gp function and substrate recognition which are not well known and present a major burden in the drug development (Chapters 1 & 6).

2. An advantage of a weak P-gp substrate radiotracer could be to measure both increases and decreases of P-gp function (Chapters 2, 3 & 6).

3. Chronotherapy based on the daily rhythm of P-gp could improve efficacy of pharmaceuticals which are weak P-gp substrates (Chapter 4).

4. Concentration dependent behavior of P-gp tracers should be taken into account in the setup of *in vitro* assays (Chapter 5).

5. PET tracer development has been focused on P-gp but should be extended to other ABC transporters as well to investigate their overlapping roles.

6. If you are not sure whether to be a chemist, biologist, physicist, pharmacist or medical doctor, choose nuclear medicine, and all of these can be combined.

7. “You only need one very good idea in your life” (Rainer Kneuer).

8. “One never notices what has been done; one can only see what remains to be done” (Marie Curie).

9. Well planned is half done (Finnish expression).